**Cowichan Chinook Salmon Early Run Abundance Assessment and Examination of Interactions between Naturally and Hatchery Spawned Chinook Salmon**

Project Description:

The Cowichan River Fall Chinook Assessment Program provides information for Cowichan Tribes, Fisheries and Oceans Canada and the Pacific Salmon Commission’s Chinook Technical Committee for the management of Chinook stocks in the Lower Strait of Georgia. In addition, the Cowichan River Fall Chinook Enhancement program was started in an effort to re-build Chinook populations in the Cowichan River and to provide a source of Chinook to use as an indicator stock. This makes the Cowichan River a prime location to track impacts of enhancement on wild stocks and to collect data to be used in a Wild Salmon Policy (WSP) status assessment. Abundance metrics are also needed to begin to characterize an un-enhanced, earlier timed, Chinook salmon run in the Cowichan watershed and allow the design of further studies (including assessing genetic distinction and timing heritability) and management actions for a recovery strategy. This proposal has two components:

1) To extend a genetic Parent Based Tagging program initiated for hatchery broodstock in 2013 to natural adult returns and provide complementary information on the reproductive success of fish in the natural environment to that for the brood-stock at the Cowichan River Hatchery.

2) Using a Dual-frequency Identification Sonar (DIDSON) and digital video images determine an escapement number for the early run of Cowichan Chinook and assess whether or not migration includes entry into Cowichan Lake.

3) Using pole seines and small mesh minnow traps collect DNA samples from Chinook fry emerging from upper watershed tributaries (into Cowichan Lake).

The project will have a 4-6 year duration and includes in-kind contributions of equipment and personnel from DFO and Cowichan Tribes as well as AFSAR and PSF funding (to be confirmed in Mid-march). A radio-tagging project may also be initiated in following years once there is a clearer understanding of current abundances of the early-timed Chinook run. This project is also connected to other CT and DFO lead stock assessment projects and projects aimed at understanding issues around low flow.